



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,358	01/28/2005	Michael J. Gouge	031264.074US	8355
25461	7590	02/24/2006	EXAMINER	
SMITH, GAMBRELL & RUSSELL, LLP 1230 PEACHTREE STREET, N.E. SUITE 3100, PROMENADE II ATLANTA, GA 30309-3592			PATEL, ISHWARBHAI B	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/523,358	Applicant(s) GOUGE ET AL.	
	Examiner Ishwar (I. B.) Patel	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) 9-19 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-8 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 28 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/28/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, drawn to a superconducting cable, classified in class 174/125.1.

Group II, claim(s) 9-19, drawn to a method of terminating a superconducting cable.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical features of group I include tape shape superconducting wire consisting an oxide superconductor and a stabilizing metal covering the same. In contrast, the special technical features of group include the step of connecting the three-phases to copper pipe phase conductors and connecting the shield to a copper shield conductor.

3. During a telephone conversation with Herbert M. Hanegan (Reg. 25,682) on January 27, 2006 a provisional election was made with traverse to prosecute the invention of group I, claims 1-8. Affirmation of this election must be made by applicant

Art Unit: 2841

in replying to this Office action. Claims 9-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

5. The abstract of the disclosure is objected to because: the abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2841

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Fujikami (US Patent No. 6,313,408).

Regarding claim 1, Fujikami, in figure 1-6, discloses cable employing an oxide superconductor, comprising: a flexible core member (11, column 3, line 40-47); a plurality of tape-shaped oxide superconducting wires (12) being laid on said core member with tension of not more than 2 kgf/mm² (column 5, line 4-10) wherein each tape-shaped superconducting wire consisting essentially of an oxide superconductor and a stabilizing metal covering the same (column 2, line 44-48), said plurality of tape-shaped superconducting wires forming a plurality of layers each being formed by laying a plurality of said tape-shaped superconducting wires in a side-by-side manner, said plurality of layers being successively stacked on said core member without an insulating layer between the plurality of layers and the core member (see figure 5, column 3, line 58 to column 4, line 10, said core member providing said superconducting cable with flexibility (flexible core), said superconducting cable capable of maintaining a superconducting state at the temperature of liquid nitrogen (oxide super conductor, capable of maintaining a superconducting state at the temperature of liquid nitrogen, column 1, line 17-45), said wires having substantially homogeneous superconducting phases along the longitudinal direction of said wire, the c-axes of said superconducting

Art Unit: 2841

phases being oriented substantially in parallel with the direction of thickness of said wire, said superconducting wires being formed by grains aligned in parallel extending along the longitudinal direction of said wire, said grains being stacked along the direction of thickness of said wire (column 3, line 9-20).

8. Claims 2-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Knaak, (German Patent No. 4340046A1).

Regarding Claim 2, Knaak discloses a superconducting cable for alternating current having phase and neutral conductors (R, S, T and 6), cooling channels (2, 7), and an outer encircling shield (8), wherein a common neutral (6) is provided for all three phase conductors (R, S, T) and the phase conductors and the cooling channels are arranged concentrically (see figure).

Regarding Claim 3, Knaak further discloses the first phase conductor (R) of the cooling channel (2) is bounded by the conducting cable core (column 2, line 1-3) and an insulation layer (3, 4, 5) of defined thickness is provided between the first and the second phase conductors, the second and the third phase conductors and between the third phase conductor and the neutral conductor respectively, a cooling channel (7) is provided as an annular channel between the neutral conductor, and an outer insulation manufactured of a superconducting material.

Regarding Claim 4, Knaak further discloses each phase conductor is manufactured of superconducting tapes, which consist of flat rolled sleeves of an oxygen-porous metal filled with a ceramic superconducting material (column 1, line 59-65).

Regarding Claim 5, Knaak further discloses the phase conductors are manufactured as tapes comprised of silver sleeves filled with a ceramic superconducting material (column 1, line 59-65).

Regarding Claim 6, Knaak further discloses liquid nitrogen is conducted through channels for cooling of the superconducting phases (see, Knaak, claim 5).

Regarding Claim 7, Knaak further discloses the neutral conductor is manufactured of copper (column 2, line 20-25).

Regarding Claim 8, Knaak further discloses the insulation layers between the phase conductors are manufactured of polyethylene or polypropylene (see abstract).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2841

Fujikami (US Patent No. 5,932,523) discloses a flexible oxide superconducting cable.

Donald P. Snowden (US Patent No. 3,612,742) discloses an alternating current superconductive transmission cable with two superconductive conductors separated by insulation.

Yasuhara Seiji (Japanese Patent No. JP402223112A) discloses a wire rod with excellent superconductive characteristic by filling superconducting ceramic powder into a porous metal powder sintered pip.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272 1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ishwar (I. B.) Patel
Patent Examiner
Art Unit: 2841
February 21, 2006